

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,027,489 B2  
APPLICATION NO. : 10/004370  
DATED : April 11, 2006  
INVENTOR(S) : Pan et al.

Page 1 of 5

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**ON THE TITLE PAGE**

At section (56), OTHER PUBLICATIONS, page 1, right column, line 8, after "No. 2. pp.", delete "267-287" and insert therefor --276-287--.

At section (56), OTHER PUBLICATIONS, page 1, right column, line 9, before the word "Klein", delete "Naja" and insert therefor --Anja--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 1, before the word "Klein", delete "Ania" and insert therefor --Anja--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 5, after "H.R.", delete "Karmimi" and insert therefor --Karimi--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 10, after "SMG2", delete "Laver" and insert therefor --Layer--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 12, before the word "Finland", delete "Heisinki" and insert therefor --Helsinki--.

**IN THE ABSTRACT**

At section (57), ABSTRACT, page 1, right column, line 4, after the word "substantially", delete "a" and insert therefor --the--.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**IN THE DRAWINGS**

At FIG. 4, item 54, line 1, after the word "AND", delete "A" and insert therefor --AN--.

At FIG. 4, item 56, line 3, after the word "CIRCULANT", delete "APPOXIMATION"  
and insert therefor --APPROXIMATION--.

At FIG. 6, item 68, line 2, after the word "RESPONSES," delete "DETERMIN" and  
insert therefor --DETERMINE--.

At FIG. 6, item 68, line 2, after the word "USING", delete "A" and insert therefor  
--AN--.

At FIG. 6, item 72, line 1, after " $R_{cir}$ ", delete "A" and insert therefor --AN--.

At FIG. 6, item 74, line 3, after the word "CIRCULANT", delete "APPOXIMATION"  
and insert therefor --APPROXIMATION--.

At FIG. 7, item 82, line 2, after the word "USING", delete "A" and insert therefor  
--AN--.

At FIG. 7, item 86, line 1, after the word "AND", delete "A" and insert therefor --AN--.

At FIG. 7, item 88, line 3, after the word "CIRCULANT", delete "APPOXIMATION"  
and insert therefor --APPROXIMATION--.

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**IN THE SPECIFICATION**

At column 1, line 59, after the word "substantially", delete "a" and insert therefor --the--.

At column 2, line 4, before "FFT", delete "a" and insert therefor --an--.

At column 2, line 10, before "FFT", delete "a" and insert therefor --an--.

At column 2, line 12, before "FFT", delete "a" and insert therefor --an--.

At column 2, line 58, before "FFT", delete "a" and insert therefor --an--.

At column 3, line 24, after the word "received", delete "samples" and insert therefor --sample--.

At column 4, line 19, before "MMSE", delete "A" and insert therefor --An--.

At column 4, line 61, delete Equation 19, and insert therefor  $-F(d) = \Lambda^{-1}F(A^H \underline{r})$ .

At column 6, line 35, before the word "used", insert --is--.

At column 6, line 63, before "MMSE", delete "a" and insert therefor --an--.

At column 7, line 1, delete Equation 37, and insert therefor  $-y = H^H \underline{r}$ .

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 7, line 46, delete Equation 42, and insert therefor

$$\text{--}\underline{s}^{(k+1)} = \underline{s}^{(k)} + \Delta_s^{(k)}, k=1, 2, \dots, N-1\text{--}.$$

At column 7, line 55, before "MMSE", delete "a" and insert therefor --an--.

At column 7, line 60, before the words "and R", delete "y" and install therefor --y--.

At column 8, line 22, after the words "R and", delete " $R_{bcip}$ " and insert therefor -- $R_{bcir}$ --.

At column 8, line 45, after the words "the last", delete "symbols" and insert therefor  
--symbol's--.

**IN THE CLAIMS**

Column 8, line 53, after the word "substantially", delete "a" and insert therefor --the--.

Column 9, line 11, after the word "substantially", delete "a" and insert therefor --the--.

Column 9, line 41, after the word "estimates", delete "is" and insert therefor --are--.

Column 9, line 44, after the word "estimates", delete "is" and insert therefor --are--.

Column 10, line 2, after the word "estimates", delete "is" and insert therefor --are--.

Column 10, line 9, after the word "substantially", delete "a" and insert therefor --the--.

Column 10, line 35, after the word "estimates", delete "is" and insert therefor --are--.

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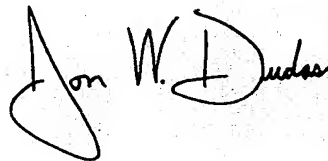
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 10, line 38, after the word "estimates", delete "is" and insert therefor --are--.

Column 10, line 42, after the word "estimates", delete "is" and insert therefor --are--.

Signed and Sealed this

Twentieth Day of March, 2007

A handwritten signature in black ink, reading "Jon W. Dudas". The signature is stylized, with the first name "Jon" and last name "Dudas" clearly legible, and "W." in the middle. The signature is written over a faint, dotted rectangular box.

JON W. DUDAS  
*Director of the United States Patent and Trademark Office*